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## NOTES ON ALBATROSSES AND OTHER PELAGIC BIRDS IN AUSTRALIAN WATERS

By DR. T. W. RICHARDS, U. S. NAVY

THE body of water known as the "Great Australian Bight", which fills an indentation on the southern coast of the Island Continent twelve hundred miles in width, bears an unenviable reputation; here the navigator well knows that bitter winds, with rain and hail, and the eternal swell which rolls in from the Antarctic, will all combine to render his passage both difficult and uncomfortable. It was with no pleasant anticipations, therefore, that we contemplated a trip from Melbourne, Victoria, to Albany, Western Australia; of all months, September—the beginning of spring—is one of the worst, and we had already sampled the Southern Ocean in crossing from New Zealand. But by the ornithological enthusiast, physical discomforts are easily overlooked; so when Mr. W. H. D. Le Souef, Director of the Melbourne "Zoo", informed me that I was about to traverse one of the most populous haunts of the albatrosses of Australian seas, I brushed up my binoculars and prepared to become intimately acquainted with my fellow voyagers. The outcome fully justified my friend's prediction, for in no other waters have I seen such an interesting display of oceanic bird-life. As indicating local conditions, it may be mentioned that the weather, too, was all we had anticipated; for four days the big battleship "Kansas" ploughed into a gale which drove the head seas over our flying bridge, some forty feet in height.

The first point of interest upon leaving Melbourne was Mud Island, a small, round hill, rising from the waters of Port Philip Harbor; for this is one of the breeding haunts of the White-faced Petrel (*Pelagodroma marina*), a straggler to our own shores, and consequently included in the A. O. U. List. Tho we passed close to the island, no birds were in sight, but we afterwards encountered them at sea. The breeding season is in November and December, and I obtained three eggs taken during these months in previous years. Reed and Davie, referring to eggs of this species from New Zealand, in the Crandall and Thayer collections, describe them as being heavily marked, for petrel eggs, with a "wreath" of spots;

my specimens, on the contrary, are "pearly white", but in two cases immaculate, while the third has a few almost imperceptible specks on the larger end. The longest and shortest measure:  $1.50 \times 1.04$ , and  $1.44 \times 1.02$  inches.

Once well at sea, albatrosses became conspicuous, both by their size and numbers overshadowing all other birds. At least four species accompanied us, from time to time, the White-capped (*Diomedea cauta*), Wandering (*D. exulans*), Sooty (*Phaethria fuliginosa*), and another, with blackish bill, which was probably the Yellow-nosed (*Thalassogeron culminatus*). Of these, the White-capped was the most abundant, out-numbering the others fifteen to one; usually there were, all told, at least a hundred of these birds in the wake of the ship. In addition, there were, more or less constantly in sight, almost as many petrels and shearwaters, the most beautiful being a pearly Prion. These smaller followers were much more erratic and independent than the albatrosses, keeping less closely to the ship, foraging widely over the waters, with an occasional tit-bit from our "galley". But whenever the opportunity occurred they did not hesitate to join in the scramble, mixing fearlessly with their larger companions. While the shearwaters and, especially, the smaller petrels, seemed to beat their wings more frequently than the big fellows, their powers of flight are fully as great, and in rapidity of motion, especially change of direction, they have decidedly the best of it; so sudden are their movements that it is often difficult to follow them with the glass, and nothing in the flight of the larger birds impressed me so strongly as to see one of these waifs, apparently but a feather, wafted helplessly before the gale, suddenly turn, stop, and, rising lightly against the blast, dart off in a series of dips and circles as tho to mock the very elements. Owing to these habits, and the general similarity of some forms, positive identification was in most cases impracticable, but I think that at least six species were usually within view.

Conditions for observing the albatrosses were much more favorable, and the following remarks, except as noted, apply equally to all species seen, as there appeared to be little difference in their habits or mode of flight, tho *D. exulans* was obviously much larger than the rest. So much has been written about the "marvellous powers of flight" possessed by these birds, that I believe one who observes them for the first time is apt to be somewhat disappointed by their appearance close at hand; for the heavy bill, short, thick-set body, and abnormally long and slender wings seem somewhat ungainly. Then, too, they are singularly silent birds, and this apparent lack of animation adds to the impression of stolid stupidity which their appearance inspires. But if such be the case, unfavorable criticism is soon dispelled; for the spectacle of dozens of these great birds maneuvering in a gale at sea, with an ease and assurance which baffles explanation, is positively exhilarating. Unlike the petrels, these massive, powerful aviators never give one the impression of being "swept away", even when under full headway "down the wind".

Of the various species, *D. cauta* seemed somewhat bolder than the rest; usually keeping close to the ship, one would occasionally drift directly over the deck, and I have stood still with one of these birds, poised, and apparently motionless, within a few feet of my head. Nevertheless, both ship and bird were gliding along at thirteen knots, and yet even at such close range it was often impossible to detect the slightest quiver of the pinions. It is only at such times that one can appreciate their size; over the water there is no standard for comparison, and I found my shipmates constantly underestimating the expanse. *D. exulans* is very much larger, but I saw none under such favorable circumstances; they sometimes passed close astern, but usually followed in wider circles, hugging the waves so closely that in turning, the long pinions frequently touched the water.

It is, I believe, generally supposed that albatrosses will follow a ship for long distances, on outstretched wings, without apparent movement, but such has not been my experience: on the contrary, at comparatively brief intervals there is apt to be a well-marked "flap", usually several times repeated. But upon continued observation it seemed to me that this was almost always done with a very definite purpose, namely, the execution of a sudden turn, or, to rise quickly and so continue in a given direction. In other words, flapping seems seldom required so far as mere progression goes, and they can undoubtedly continue in the air and cover great distances with no other movement of the wings than a change of curvature in balancing. In this manner, they sail with, across, or down the wind, without apparent effort, tho to increase their elevation it seems necessary to head up against the air current. Sailing with the wind, there appears to be always a tendency to settle, tho perhaps almost imperceptibly; but even in this position they may still, for a time, pursue an undulating course, following, as they often do, the conformation of the waves. It would seem that their best point of sailing, like a schooner's, is "on the wind", viz: neither having it directly ahead nor "abeam" but between the two. Even so, they are unable to lay a straight course indefinitely, and soon resort to circles or a few vigorous beats of the wings; apparently the selection of either is rather a matter of convenience and time than one of necessity. When fairly under way, gliding, the wings are extended stiffly and almost horizontally, but in the execution of sudden maneuver the tips may be much bent downward, forming a bow, and it has seemed to me that at such moments the two wings are not invariably symmetrical. In taking a sharp turn, the inclination or "dip" which a bird can make, is one of their most startling performances, and it really looks sometimes as if they must "turn turtle": I am sure the angle may be as much as  $90^\circ$ , for to the eye the wings seem absolutely perpendicular, one tip grazing the water, the other pointing to the sky above.

All in all, if we give him the gale he loves so well, the albatross lives up to his reputation, but I must confess that for quiet dignity in flight I have never seen these, or any pelagic birds if we except the Frigates, equal the grandeur displayed in the endless circles of our larger birds of prey; but the conditions are so different that comparison is, perhaps, unfair. So far as my experience goes, the albatross dislikes a calm—which, by the way, he seldom gets in his favorite latitudes—as much as an old time sailor. About a week after the trip here referred to, the Atlantic Fleet of sixteen battleships was cruising up the west coast of Australia; there was very little wind and we repeatedly passed small flocks of these birds resting on the water, and altho eight ships passed on either side of them, in no case did I see them rise and follow. Certainly this was remarkable, for with ordinary weather conditions they had never failed us for more than three thousand miles.

To the ornithologist on shipboard, the most interesting period is just after meal hour, when the cooks are clearing out the "galley". Ever on the alert, no suitable morsel escapes the hungry horde, and it is wonderful how accurately they can pick out the "wheat from the chaff", no second glance being given to the odds and ends unfit for food. But with all their eagerness to be first at the feast, the prizes go to the ones that can stop and *alight* the quickest. And most of them make a bad mess of it: swooping rapidly to the coveted spot, they find it difficult to check their speed, and many have to pass and circle back again. With those more fortunate, or expert, wings are thrown suddenly back, the tail is wide-spread and depressed, and—a most comical effect—the broad, webbed feet are expanded and thrust out forward, exactly as a skater digs his heels in the ice to stop his headway. Once on the water, the wings are kept partly expanded and raised high

over the back, the wind's levitation thus bearing most of the weight. Actually, the birds now *walk on the water*, paddling with the big feet quite sufficing to lift the bodies clear, and, gulping food rapidly as they go, the whole performance is most grotesque. With all this excitement, there is no noise; in a few moments the last scrap has disappeared, a hundred wings are extended, and, with a final "push", each bird rises lightly to windward, resuming his tireless vigil in our wake.

I am inclined to believe that among ornithologists unaccustomed to ocean voyaging, a mistaken estimate is apt to prevail as to the relative number of pelagic birds: I say "relative", for of course the actual total is enormous. Such a false impression would naturally arise from several causes, the principal one, no doubt, being a failure to realize the immensity of the seas, covering, as they do, four-fifths of the earth's surface: an incredible number of birds may be scattered over this vast area and yet appear, as is actually the case, few and far between. Then, too, these birds breed in colonies, and are best known to us when assembled in apparently countless hordes. While it is true that in making a coastwise trip, say from San Francisco to San Diego, or New York to New Orleans, one would, during certain seasons of the year, have plenty of feathered followers, few of the birds observed would be "pelagic", and a voyage over the high seas in similar latitudes would probably be comparatively lonely; indeed, I can confidently assert that except in high latitudes, and especially those of the southern hemisphere, one may sail not only hundreds but *thousands* of miles and not see a bird for days at a time. The recent voyage of the "Kansas"—with the other fifteen battleships of the U. S. Atlantic Fleet—from San Francisco to Japan, via Hawaii, New Zealand, Australia and the Philippine Islands, may serve as an illustration. The total distance covered was approximately 12,000 miles, but except from Lat. 32 S., Long. 178 E. (some two hundred miles north of New Zealand) to Lat. 30 S., Long. 112 E. (off the west coast of Australia) I did not observe, all told, as many as 100 pelagic birds. Doubtless many escaped notice, but I was much of the time on deck myself, and my shipmates, knowing my hobby, were always keen to send me word whenever any "strange birds" were about. I think, therefore, such errors were reasonably few and quite insufficient to materially affect the general conclusions expressed herein.

*U. S. S. Kansas, Yokohama, Japan.*

## NESTING OF THE XANTUS MURRELET AS OBSERVED ON LOS CORONADOS ISLANDS, LOWER CALIFORNIA

By CHESTER LAMB

THIS article does not pretend to be a life history of *Brachyramphus hypoleucus*, for my stay on its breeding grounds was much too short to make full observations. It is merely an account of the manner in which the species nests in the locality where I found it.

Los Coronados Islands are four in number, situated a few miles south of the boundary line of California and Mexico, and about ten miles from the mainland. They are quite small, the largest being not over two miles and a half long, by a mile wide, the next in size about half as large, while the two remaining are mere large rocks rising out of the sea.

During the week, May 30 to June 6, 1908, it was my good fortune to camp on